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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,248	09/30/2003	Masahiko Yamada	243144US-3DIV	2856
22850	7590	08/02/2006	EXAMINER	
C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			GREENE, DANIEL LAWSON	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,248

Applicant(s)

YAMADA ET AL.

Examiner

Daniel L. Greene Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 4, 6, 7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 2, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/24/2006 have been fully considered but they are not persuasive. However Applicant's perfection of the foreign priority documents removes 2002-40182 from being prior art and as such the Rejection of section 6 of the previous Office action mailed 1/24/06 is hereby withdrawn. All other rejections from said previous Office action are maintained and incorporated herein by reference.
 2. Applicant has been granted allowable subject matter in claims 4 and 9 but continues to argue the more generic claim 2. The patentable feature appears to be the application/integration of a flat surface to the portion of a rotation prevention pin that passes directly through a coolant stream of an interior passage of a thimble screw of a nuclear fuel assembly. Prior art shows this rotation prevention pin to be a right cylindrical column with no flat surfaces other than the ends of the pin (which are not the subject of concern). As explained in the previous Office actions, maintained and incorporated herein by reference, It has been and remains the Examiners position that the prior art does indeed have a coolant collision portion that inherently causes an increase in pressure drop of the coolant during scream mode
- Regarding applicant's arguments that Figures 2A and 2B are not Admitted Prior Art and are referred to merely as "Related Art" in the specification, Applicant is directed to review page 1 line 17 to page 2 line 24 of the specification as filed wherein it is clearly stated "An example of a nuclear reactor...widely used...", and "Of the structure of the fuel assembly briefly described above, the structure of the connecting portion...will be

described in more detail with reference to the accompanying drawings...Fig 2A and 2B".

(Emphasis added) The terms "widely used" is considered as evidence that figures 2A and 2B are indeed Admitted Prior Art or "APA".

3. If Applicant wishes to maintain that Figures 2A and 2B are disclosed as prior art then applicant **is required under 37 CFR 1.105 to submit ALL information used:**

- a. to draft the application 37 CFR 1.105(a)(1)(iv)
- b. in the invention process 37 CFR 1.105(a)(1)(v)
- c. to determine the improvement over the "related art", i.e. where did the related art come from? See 37 CFR 1.105(a)(1)(vi).

4. A statement by applicant that this information is unknown and/or not readily available, will be accepted as a complete response to this requirement however such would appear indicative that the Examiners contentions are correct. Further, if applicant does indeed reply that the information is unknown and/or not readily available then this requirement falls upon the Assignee if applicable.

In regard to the requirement for information under 37 C.F.R. 1.105, notice is taken of the January 3, 2005 Decision of the United States Court of Appeals for the Federal Circuit in the case of Star Fruits S.N.C. v. United States.

Pertinent portions of said Jan. 3, 2005 decision have been reproduced below.

Under 37 C.F.R. §1.105 the Office can require information that does not directly support a rejection. An agency's interpretation of its own regulations is entitled to substantial deference and will be accepted unless it is plainly erroneous or inconsistent with the regulation. See Eli Lilly & Co. v. Bd. Of Regents of the Univ. of Wa., 334 F. 3d 1264, 1266 (Fed. Cir. 2003). Here, the Office considered information concerning any sale or public distribution of the claimed invention and any information concerning Breeder's Rights applications or grants as within the authorized scope of a Requirement For Information under section 1.105.

This interpretation is not plainly erroneous or inconsistent with the regulation. Congress has delegated to the Office the rulemaking power to "establish regulations, not inconsistent with law, which-(A) shall govern the conduct of proceedings in the Office." 35 U.S.C. § 2(b)(2) (2000)

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(formerly at 35 U.S.C. § 6(a) (1988), see Merck & Co. v. Kessler, 80 F. 3d 1543, 1549-50 (Fed. Cir. 1996)); Stevens v. Tamai, 366 F.3d 1325, 1333 (Fed. Cir. 2004). Section 1.105 stems from an initiative entitled Changes to Implement the Patent Business Goals. Through notice and comment rulemaking the Office made explicit the inherent authority of Office employees to require information from an applicant. The goal is to "encourage" employees to use that power to "perform the best quality examination possible." 65 Fed. Reg. 54,604, at 54,633 (September 8, 2000) (to be codified at 37 C.F.R. pts. 1, 3, 5, 10); see also 64 Fed. Reg. 53,772 (proposed October 4, 1999); 63 Fed. Reg. 53,498 (proposed October 5, 1998). The final rule permits that "the examiner or other Office employee may require the submission ... of such information as may be reasonably necessary to properly examiner or treat the matter." 37 C.F.R. 1.105(a)(1) (emphasis added).

We think it clear that "such information as may be reasonably necessary to properly examiner or treat the matter," 37 C.F.R. 1.105(a)(1), contemplates information relevant to examination either procedurally or substantively. It includes a zone of information beyond that defined by section 1.56 as material to patentability, and beyond that which is directly useful to support a rejection or conclusively decide the issue of patentability. Several observations militate in favor of this conclusion.

First, under the current regulations an applicant has an affirmative duty to disclose information material to patentability. See 37 C.F.R. § 1.56. Because an applicant already has a duty to disclose this information, it makes no sense for the Office to promulgate a rule empowering it to "require the submission" of information the applicant is required to submit in the first instance.

Second, section 1.105 identifies the required information as that information "reasonably necessary to properly examiner or treat the matter" instead of that information "material to patentability." Under ordinary principles of interpretation, the choice of different language indicates a different intended meaning.

Third, the plain language of the regulation contemplates requirements for information that go beyond information required by section 1.56. For example, "any non-patent literature ... by any of the inventors, that relates to the claimed invention[.]" 37 C.F.R. § 1.105(a)(1)(iii) (emphasis added), could include sales brochures, catalogues, or PBR applications or grants. "[A]ny use of the claimed invention known to any of the inventors at the time the application was filed notwithstanding the date of the use," id. § 1.105(a)(1)(vii) (emphasis added), could refer to uses that would not affect patentability at all. Likewise, information directed to whether a search was conducted and what was searched, id. § 1.105(a)(1)(ii), is not necessarily required by section 1.56. Other requirements for information are also foreseeable under the "reasonably necessary to properly examiner or treat the matter" standard. For instance, it might be reasonably necessary for the Office to require an explanation of technical material in a publication, such as one of the inventor's publications, or require the applicant's comments on a recent Federal Circuit opinion and how that opinion affects examination. See, e.g., 65 Fed. Reg. at 54,634. Although this information improves the quality and efficiency of examination it is not necessarily information that an applicant is required to provide under section 1.56¹. In sum, we think that the Office's interpretation of 37 C.F.R § 1.105 conforms to the plain language of the regulation....

The Director is charged with the duty of deciding whether a patent should issue from an application. To perform that duty, the law must be applied to the facts at hand in any application. That the person charged with enforcement of the law, here an examiner, may sometimes disagree with the applicant on the theory or scope of the law to be applied is hardly surprising. So long as the request from the examiner for information is not arbitrary or capricious, the applicant cannot impede the examiner's performance of his duty by refusing to comply with an information requirement which proceeds from the examiner's view of the scope of the law to be applied to the application at hand. To allow such interference would have the effect of forcing the Office to make patentability determinations on insufficient facts and information. Such conduct inefficiently shifts the burden of obtaining information that the applicant is in the best position to most cheaply provide onto the shoulders of the Office and risks the systemic inefficiencies that

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attend the issue of invalid patents. Examination under such circumstances is neither fair and equitable to the public nor efficient.

5. Regarding arguments towards Figures 2a and 2B and pin (17), the Examiner has clearly explained how the current claim language reads on the APA because the claim does not positively recite that the coolant collision portion is configured to increase the pressure drop nor that a coolant collision portion, at a drain hole side, of the rotation prevention pin, against which the coolant flowing from the distal end toward the spot facing hole, increases the pressure drop of the coolant during the scram mode. It appears that regardless of how the claim language is modified, **the effect of increasing the pressure drop is an intended use of the coolant collision portion that any device, item, etc. would exhibit at least to some degree when placed in the stream of coolant flowing there through (such as the garden hose analogy).**

6. It appears even applicant agrees with the Examiner that the round pin will indeed cause at least some amount of a pressure drop, which supports the Examiner contentions that such is so, see for example the remarks received 5/24/06, page 4, lines 1-7;

"In the attached Appendix, the fluid resistance C_o of a round object is 1.00 (refer to the circled portion (1)), whereas the fluid resistance C_o of a planar object is 2.2 (refer to the circled portion (2)). Therefore, in a case of a rotation preventive pin (17) that is round as shown in Figure 2A, the fluid resistance C_o is low..." (Emphasis added)

Just because "round" pin (17) does not increase the pressure drop **AS MUCH AS** some of the **OTHER SHAPES** does not alleviate the FACT that the round pin does

indeed offer some resistance which inherently causes and increase in pressure drop of the coolant in the scram mode and hence anticipates Claim 2.

It is noted that the claim does not recite any metes and bounds of the amount of pressure drop desired/required nor how much it is supposed to be increased. The claim language requires a coolant collision portion in order to increase pressure drop. The round pin does indeed cause an increase in pressure drop in relation to the absence of said pin, and hence reads on the claim.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Danielson clearly makes the motivational statement in column 1 lines 40-46, "incorporation of a coolant flow metering device...is not only...more cost effective...but also a more accurate method in terms of coolant flow regulation."

8. In response to applicant's argument that Danielson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this

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case, both applicant and Danielson are concerned with coolant flow regulation within subcomponents of nuclear fuel assemblies. Further, a review of the Class and Subclass of the instant invention, i.e. 376/449 shows that the United States Patent Office does not separate Boiling Water Reactors from Pressurized Water Reactors hence Applicant's argument that the art is non-analogous is untenable.

Claim Rejections - 35 USC § 102 and 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claim 2 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Admitted Prior Art (APA) for the reasons set forth in section 4 of the previous office action mailed 1/24/2006 as explained in more detail in sections 2-8 above.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA as applied to claim 2 above and further in view of U.S. Patent 5,663,993 to Danielson et al. (hereinafter Danielson) for the reasons set forth in section 5 of the previous office action mailed 1/24/2006 as explained in more detail in sections 2-9 above.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DIG 
2006-07-27


JACK KEITH
SUPERVISORY PATENT EXAMINER